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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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SCOTT T WAKEMAN
DENNISON MESEROLE SCHEINER & SCHULTZ
1745 JEFFERSON DAVIS HIGHWAY STE 612
ARLINGTON, VA 22202

EXAMINER

KIM, DAVID S

ART UNIT

PAPER NUMBER

2633

DATE MAILED: 06/04/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

PR4

Office Action Summary

Application No.

09/437,489

Applicant(s)

ISHII, HIROHIKO

Examiner

David Kim

Art Unit

2633

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 11 November 1998.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-7 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-7 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 11 November 1998 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☒ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s) _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

DETAILED ACTION

Priority

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Drawings

2. Figures 7-9 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.
3. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(4) because reference characters "2 " and "7a" have been used to designate both the substrate and resin of Figs. 7 and 8 and the substrate and resin of Fig. 9, respectively. According to the illustrations, Figs. 7 and 8 present different views of the same object. However, the object portrayed in Fig. 9 is not the object portrayed in Figs. 7 and 8. A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.
4. Applicant is required to submit a proposed drawing correction in reply to this Office action. However, formal correction of the noted defect may be deferred until after the examiner has considered the proposed drawing correction. Failure to timely submit the proposed drawing correction will result in the abandonment of the application.

Specification

5. Applicant is reminded of the proper content of an abstract of the disclosure.

A patent abstract is a concise statement of the technical disclosure of the patent and should include that which is new in the art to which the invention pertains. If the patent is of a basic nature, the entire technical disclosure may be new in the art, and the abstract should be directed to the entire disclosure. If the patent is in the nature of an improvement in an old apparatus, process, product, or composition, the abstract should include the technical disclosure of the improvement. In certain patents, particularly those for compounds and compositions, wherein the process for making and/or the use thereof are not obvious, the abstract should set forth a process for making and/or use thereof. If the new technical disclosure involves modifications or alternatives, the abstract should mention by way of example the preferred modification or alternative.

The abstract should not refer to purported merits or speculative applications of the invention and should not compare the invention with the prior art.

Where applicable, the abstract should include the following:

- (1) if a machine or apparatus, its organization and operation;
- (2) if an article, its method of making;
- (3) if a chemical compound, its identity and use;
- (4) if a mixture, its ingredients;
- (5) if a process, the steps.

Extensive mechanical and design details of apparatus should not be given.

6. The disclosure is objected to because of the following informalities: on page 2, line 2, the meaning of "visible rays cutting material" is not clear; there appears to be a typographical error.

Appropriate correction is required.

7. The disclosure is objected to because of the following informalities: there appears to be conflicts between the specification and the drawings. On page 3, lines 21 and 24, Figs. 4 and 6 show "a radiation pattern in the X direction," respectively. However, the illustrations of Figs. 4 and 6 appear to present radiation patterns in the Z direction.

Appropriate correction is required.

8. The disclosure is objected to because of the following informalities: on page 5, line 2, the meaning of "marrow in the Z direction" is not clear; there appears to be a typographical error.

Appropriate correction is required.

Claim Rejections - 35 USC § 103

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

10. Claim 1 is rejected under 35 U.S.C. 103(a) as being unpatentable over Rosenberg in view of Yamana et al. Rosenberg discloses an IR communication device comprising a substrate, a light-emitting element mounted on the substrate, a light-receiving element mounted on the substrate, a first lens provided on the light-emitting element, and a second lens provided on the light-receiving element (Rosenberg, col. 2, lines 50-57, Figs. 3a-3d). Rosenberg does not disclose the first lens having an elongated convex shape. However, Yamana et al. discloses a lens having an elongated convex shape provided on a light-emitting element (Yamana, col. 4, lines 1-3, Fig. 2). At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to provide an elongated convex lens on the light-emitting element of Rosenberg, as described in Yamana et al. One of ordinary skill in the art would have been motivated to do this since "light rays which have passed through that surface [lens] portion are collected more closely along the optical axis of the lens" (Yamana et al., col. 4, lines 3-5, Figs. 2 and 8).

This increased collection of light rays along the optical axis of the lens enables one to focus the light rays in a particular direction with less scatter toward peripheral directions.

11. Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Rosenberg and Yamana et al. as applied to claim 1 above, and further in view of Amano. Rosenberg and Yamana et al. disclose all the limitations of claim 2 except for said first lens having a semi-cylindrical shape. However, Amano teaches such a lens having a semi-cylindrical shape (see Figs. 4, 9, 11, and 12). At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to use the semi-cylindrical shape of Amano for the lens of Yamana et al. in the device of Rosenberg. One of ordinary skill in the art would have been motivated to do this since "light rays which have passed through that surface [lens] portion are collected more closely along the optical axis of the lens" (Yamana et al., col. 4, lines 3-5, Figs. 2 and 8). This increased collection of light rays along the optical axis of the lens enables one to focus the light rays in a particular direction with less scatter toward peripheral directions.

12. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Rosenberg and Yamana et al. as applied to claim 1 above, and further in view of Fujimura et al. Rosenberg and Yamana et al. disclose all the limitations of claim 3 except for said first lens having an elongated semi-spherical shape. However, Fujimura et al. teaches such a lens having an elongated semi-spherical shape (see Drawings 1-3 and section "Detailed Description," items 0011 and 0014-0016). At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to use the elongated semi-spherical shape of Fujimura et al. for the lens of Yamana et al. in the device of

Rosenberg. One of ordinary skill in the art would have been motivated to do this since "light rays which have passed through that surface [lens] portion are collected more closely along the optical axis of the lens" (Yamana et al., col. 4, lines 3-5, Figs. 2 and 8). This increased collection of light rays along the optical axis of the lens enables one to focus the light rays in a particular direction with less scatter toward peripheral directions.

13. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Rosenberg in view of Yamana et al. Rosenberg discloses all the limitations of claim 4 except for a lens having an elongated convex shape provided on a light-emitting element wherein said light-emitting element comprises a plurality of light-emitting elements. However, Yamana et al. teaches a lens having an elongated convex shape provided on a light-emitting element (see treatment of claim 1 above) wherein said light-emitting element comprises a plurality of light-emitting elements (Fig. 1). At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to utilize a plurality of light-emitting elements in Rosenberg's device, as taught by Yamana et al. One of ordinary skill in the art would have been motivated to do this since light rays emitted from individual light-emitting elements would spatially mix, resulting in considerable betterment in the effect of luminance variations between individual light-emitting elements upon spatial luminance distribution in the subject field being illuminated (Yamana et al., col. 7, lines 8-16).

14. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Rosenberg in view of Yamana et al. Rosenberg discloses all the limitations of claim 5 except for a lens having an elongated convex shape provided on a light-emitting element wherein the

lens is elongated in a horizontal direction. However, Yamana et al. teaches a lens having an elongated convex shape provided on a light-emitting element (see treatment of claim 1 above) wherein the lens is elongated in a horizontal direction (Fig. 1). At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to use a lens that is elongated in a horizontal direction in Rosenberg's device, as taught by Yamana et al. One of ordinary skill in the art would have been motivated to do this to provide a "device for illuminating linear fields" (Yamana et al., col. 1, lines 8-9).

15. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Rosenberg in view of Yamana et al. Rosenberg discloses all the limitations of claim 6 except for a lens having an elongated convex shape provided on a light-emitting element and a reflective cup enclosing said lens. However, Yamana et al. teaches a lens having an elongated convex shape provided on a light-emitting element (see treatment of claim 1 above) and a reflective cup enclosing said lens (see Figs. 1-3 and the corresponding descriptions in col. 2, lines 55-60; col. 3, lines 10-20). At the time of the invention was made, it would have been obvious to a person of ordinary skill in the art to incorporate a reflective cup enclosing the lens of Yamana et al. into Rosenberg's device, as taught by Yamana et al. One of ordinary skill in that art would have been motivated to do this since "light rays emitted sidewardly of the chip are reflected frontwardly by a convex mirror [cup] formed on the substrate integrally therewith. Therefore, light rays incident on the cylindrical lens within an effective range will increase, it being thus possible to achieve improved utilization of light" (Yamana et al., col. 4, lines 27-33).

16. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Rosenberg in view of Yamana et al. Rosenberg discloses all the limitations of claim 7 except for a

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lens having an elongated convex shape provided on a light-emitting element wherein the light-emitting element comprises a plurality of light-emitting elements wherein the light-emitting elements are arranged on a horizontal line. However, Yamana et al. teaches a lens having an elongated convex shape provided on a light-emitting element (see treatment of claim 1 above) wherein the light-emitting element comprises a plurality of light-emitting elements (see treatment of claim 4 above) wherein the light-emitting elements are arranged on a horizontal line (see Fig. 1 and col. 2, line 68 – col. 3, line 4). At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to arrange the plurality of light-emitting elements of Yamana et al. on a horizontal line in Rosenberg's device, as taught by Yamana et al. One of ordinary skill in the art would have been motivated to do this to provide a "device for illuminating linear fields" (Yamana et al., col. 1, lines 8-9).

Conclusion

17. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Angerstein et al., Schairer, Bradley et al., Kerklaan et al., Tolbert, Takahashi et al. are cited to show related communication devices.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to David Kim whose telephone number is 703-305-6457. The examiner can normally be reached on Mon.-Fri. 8 AM to 5 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jason Chan can be reached on 703-305-4729. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9314 for regular communications and 703-872-9314 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-305-4750.

DSK
May 30, 2002



JASON CHAN
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600